

# CHAPTER 3

## METHODOLOGY

### 3.1 Methodological Issues

Before the method used in this study is discussed, it is important that methodological issues related to the study of collaborative learning are discussed first so that the related methodological benefits and problems can be made clear at the beginning.

#### 3.1.1 Coding Versus Interpretative Approaches

As Mercer and Wegerif (1999) have pointed out, the methods used to investigate collaborative learning (in physical classroom settings) can be crudely categorised as either:

1. Experimental studies in which subjects carry out specially designed problem-solving tasks, their interactions are analysed using some sort of coding scheme yielding quantitative data, and this analysis is related to outcome measures of subjects' success with the set task;
2. Observational studies of the talk and interactions of children working together in their usual curriculum-based classroom activities, in which researchers use qualitative, interpretative methods to describe and explain the processes observed, with little attention usually being given to outcome. (Mercer and Wegerif, 1999, p. 81)

The strength of experimental studies based on coding, according to Mercer and Wegerif (1999), is in their capacity to handle large corpora of data, to offer explicit criteria for comprehensively categorising the whole of a data set, to offer a basis for making systematic comparisons between the communicative behaviour of groups of children and to enable researchers to relate this behaviour to measures of the outcomes of collaborative activity. However, there have been quite a number of

serious criticisms on the use of coding methods. Edwards and Mercer (1987) note that in reports of such studies the coded analysis is often presented as if the coded information is the data itself and the original observational data is not presented at all. Furthermore, the prior interpretative analysis that generated the codes from the data is commonly obscured or forgotten conveniently. Draper and Anderson (1991) identify four specific kinds of problems that coding methods must encounter in dealing with language in use:

1. Utterances are often ambiguous in meaning, making coding difficult or arbitrary.
2. Utterances may have – indeed often have – multiple simultaneous functions, which is not recognised by most coding schemes which normally involve the assignment of utterances to mutually exclusive categories.
3. The phenomena of interest to the investigator may be spread over several utterances, and so any scheme based on single utterances as the unit of analysis may not capture such phenomena.
4. Meanings change and are re-negotiated during the course of the ongoing conversation.

Even though the problems above refers to face-to-face talk, they are relevant to the analysis of digital text found in asynchronous email discussion, which is to be seen as a virtual classroom situated in cyberspace. These individual emails in an email discussion can be seen as extended turns dispersed in space and time. Even though the first problem above can be partially accounted for by the use of two or more independent coders and measuring their level of agreement, the third and fourth problems cannot be overcome if the research methods are incapable of capturing the temporality and sequentiality of the ever evolving online talk between the

interlocutors, while the second methodological problem of design can only be eliminated with a qualitative approach.

Crook (1994) makes a similar point when he suggests that coding methods encounter particularly serious problems when applied to the study of collaborative learning, because the process under study is one of development of shared knowledge, through language use and joint activity, over time. The shared knowledge and its representation in text by interlocutors will be of an organic and dynamic nature and will easily elude the administration of the static means of coding procedures. The value of such research would necessarily be limited if the temporal and chronological dimensions of cooperative and collaborative activities are ignored.

Markee (1994) argues along a similar line as Crook (1994) above when he calls for more emphasis on interpretative explanations in SLA research, away from the dominance of nomothetic tradition, while acknowledging the complementary nature of both approaches<sup>26</sup>. He specifically calls for the ethnomethodological respecification of SLA studies, after Giddens' (1988) who did the same for social science. This respecification:

1. problematises the methodological assumptions in traditional social science about the process of theory construction on intersubjectively achieved phenomena that are worthy of analysis in their own right;
2. embraces ordinary language as the indispensable medium for analysing participants' constructions of their everyday experience, whether this analysis is done by participants or by analysts. (Markee, 1994, p. 97)

Thus, from an ethnomethodological perspective, as Markee points out, the scientific rigour of a study is not evaluated in terms of the sophistication of the statistical techniques that might be employed but in that it explains the intersubjective

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<sup>26</sup> In terms of research methodology, an experimental, quantitative methodology is associated with the nomothetic tradition, and a naturalistic, qualitative methodology is associated with the hermeneutic tradition (Markee, 1994).

achievement in which participants understand the locally recognisable and locally adequate turns-at-talk that they engage in to organise their world (Markee, 1994). In other words, the organic and dynamic nature and the temporal and chronological dimensions of collaborative engagement would be fully accounted for with such ethnomethodological respecification. To achieve this, Markee (1994) suggests that convergent evidence would need to be used to corroborate any claims, based on prototypical examples that give discursive form to the phenomenon being analysed. Furthermore, analyses must be subject to critical falsification by demonstrating that potential counterexamples and different accounts for the same data set have been anticipated and that findings can be replicated with a different data set. Such a position would be taken in the following chapter when discursive data are analysed.

Interpretative approach to the analysis of talk and collaborative activity, as originally devised by Douglas Barnes (Barnes, 1976; Barnes and Todd, 1978, 1995), however, is sensitive to context and to the temporal development of shared meanings. Being allied to ethnography, the approach incorporates intuitive understanding gained through discussions with participating subjects and participation in the context described. The typical method of reporting is to demonstrate and illustrate the analysis by including transcribed extracts of talk with the researcher's commentary. Qualitative discourse analysis in the tradition of Barnes must therefore rely on presenting short selected texts. The labour-intensive, time-consuming nature of discourse transcription and analysis usually requires that sample size in the traditional sense of number of participants be relatively limited. This problem of sample size is to a great extent eliminated with the use CMC data because text-based data are readily available, but detailed analysis can only be done on some prototypical examples.



One notion that has been frequently discussed concerning qualitative research is that of saturation, which in grounded theory means the analysis of additional protocols until one obtains no new categories (Wood & Kroger, 2000). Wood and Kroger have stressed that “in discourse analysis, the analyst works with many different kinds of units, treats categories differently, and is not necessarily interested in comprehensiveness” (p. 81), and they conclude by saying that “the endpoint is not that one stops finding anything new with further cases, but that *the analysis of the cases considered to date has been thorough* [italics added]” (p. 81). Thus with regard to the sample size collected and the data analysis to be carried out later, vis-à-vis language related episodes (LRE)<sup>27</sup> and issues on social presence and equalising effects of cyberspace that have special pedagogical implications, I will strive for thoroughness of analysis instead of comprehensiveness of data.

### 3.1.2 First-Order Versus Second-Order Perspectives

Marton (1981) makes the distinction between researching what people do and researching how they perceive what they do, and calls the former first-order research and the latter second-order research. This involves a shift in research perspective, as Marton (1981) explains:

In the first, and by far most commonly adopted perspective, we orient ourselves towards the world and make statements about it. In the second perspective, we orient ourselves towards people’s ideas about the world (or their experience of it). Let us call the former first-order and the latter second-order perspectives. (Marton, 1981, p. 178)

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<sup>27</sup> These are the episodes of interaction where the students or the teacher focus on the form of language or exchanges (episodes of interaction) that have special implications on the learning of new language forms.

Most studies done on the use of CMC in a classroom operate at the second level, the level of perception. Trying out innovative teaching methods through CMC would surely call for an evaluation of students' perception on the new approach, because most will instinctively judge the success of their innovative approach in teaching through students' positive response to class activities. This, in turn, is determined by how students see the activities as helping them, which is a second-order issue. While there are no doubt valuable insights to be gained from such second-order studies in illuminating students' attitude to a new delivery system in mediating the teaching and learning process, such insights are described in relative terms based on localised classroom settings and influenced by diverse institutional practices. In such cases generalisation of the effects of instructional activities using CMC across institutions even with the same or similar macro environment would be difficult.

## **3.2 Use Of CMC Data: Issues**

### **3.2.1 Ease and Advantages of Data Collection in CMC**

A few words about the use of CMC data in general and email discussion data in specific are in order. Some researchers have chosen to sample a representative corpus and employed various corpus linguistics software techniques for data analysis, some have made use of questionnaires as data-gathering instruments to investigate participants' attitudes and views from various perspectives (second-order research), while some others have relied on ethnographic observation of naturally occurring interactions which can be done unobtrusively in CMC environments (covert observation). Regardless of the methods employed, in CMC there are numerous advantages compared to other areas of investigation. One is that large corpora can be amassed easily, in that interactions come digitally entered as text on a computer and

usually no further processing of the text is necessary, in contrast to the case for spoken data, where laborious transcription work will need to be carried out first. Even then, the transcribed data would be decontextualised from its original settings and mode. This will not be the case for research using CMC data. The digital data stored is the exact and complete representation of the original data, in the same mode and the context fully preserved and retained. Thus the fidelity of data is inherently high.

The other is that observers can observe without their presence being known, or change their identity to become a researcher without the knowledge of their interlocutor, thus avoiding the "Observer's Paradox" that has always been an insurmountable dilemma in the face-to-face research of the social sciences. A change in identity for a participant observer in a CMC environment is more a change in mental state than an actual change of identity. This is especially true for asynchronous CMC where the flexibility in time makes such mental shift possible. The observer can be a participant without any conflict of identity at any one time and even at the same time overcome the problems of time constraint and mental processing limitations, as the response time between turns is much more flexible than a face-to-face real-time communication.<sup>28</sup> Furthermore the inevitable bias of being an observer and participant simultaneously can be avoided by distancing the two roles with a cool down period. This can be achieved by examining the archived digital data at a later date when the original situations can be relived entirely with an observer-researcher perspective. Other than eliminating the bias, this also prevents taxing the mental resources of the

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<sup>28</sup> It should be noted that even the types of CMC such as Internet Relay Chat (IRC) and those made available through other real time chat programs such as ICQ and Microsoft NetMeeting that have been treated as occurring in real time are in fact relatively asynchronous in nature as a few seconds of delay is always acceptable without affecting the communicative exchanges. In face-to-face communication, however, a few seconds of delay will always cause a different interpretation of the message, which by far is the only type of strict synchronous communication.

observer-participant who needs to juggle between two different roles if these roles cannot be separated and assumed at different times.

### **3.2.2 Ethical Issues**

Some may question how ethical it is to collect data from personal email exchanges for research purposes without the knowledge of the subjects. Some may be of the opinion that if the researcher is personally involved in the electronic exchanges then this should not pose any ethical problem.

In this study where data was collected from the researcher's personal record of the email exchanges with different participants, and where the instructional setting of the online correspondence had been made clear to all the participating subjects right at the outset, it is believed that the ethical issue was to a large extent taken care of. Furthermore, the subjects' real name, and where necessary, the external physical context referred to in the excerpts of the messages had been changed accordingly while ensuring that the meaning of the messages and the purpose of the study would not be affected. Most importantly the focus of analysis in this study is not the content of the emails but the development of the interlanguage of the subject that carries such a content. As this is seen as a neutral system and the processes involved in the exchanges should be generalisable to all language learners, the covert observation technique adopted in this study should be free from any ethical issue.

The second set of email data collected from students' email exchanges should pose even less ethical problems. It was collected from an online reading and writing program that was incorporated into the classroom activities of an English For Specific Purpose program of a local college. Since all emails exchanged in these online groups were for academic purposes and personal messages were not allowed, the ethical problem was more or less eliminated. Furthermore, the researcher was the tutor and

online moderator for all groups, both in class and online. This makes the researcher the owner of all emails exchanged between the students, and thus has the right to make free use of the email archives.

### **3.2.3 Fidelity**

Since the original data for this study was text itself and no change of mode was needed, the quality of the data records must therefore be of the highest fidelity, with its complete correspondence to the actual discourse data to be studied. Wood and Kroger (2000, p. 56) have pointed out that there is always some sort of intervention, interpretation, or transformation of the discourse by the researcher before the stage of analysis. Even though with the use of CMC data, intervention and transformation of the discourse have been more or less eliminated, the researcher's interpretation of the text can still be affected to a certain extent with the displacement of time and context from the original situation. But the researcher's interpretation after the displacement in time and external context should allow a more objective interpretation. Furthermore, the actual context of action could always be recreated through active mental effort of the participating researcher with the availability of complete data in their original form.

### **3.2.4 Naturalness**

It is in general agreement that when discourse analysis is used as a method of analysis, it should focus on naturally occurring discourse. As Wood and Kroger (2000, p. 57) point out, recommendations about the use of natural discourse refer to "the circumstances under which the discourse is produced" and that naturally occurring discourse "is not produced through the instigation of the researcher". Wood and Kroger, in this regard, have noted some qualifications. The first is that the

distinction between naturally occurring discourse and discourse produced at the instigation of the researcher is usually not obvious, and that if a participant were unaware of being a participant in a study, the discourse produced would not be researcher instigated from that participant's point of view, even if the researcher's contributions would not be naturally occurring, but with some manipulations, as in this study. They have specifically noted that the concern here is whether we have a reason to analyse discourse that the researcher are responsible for producing. For our case, the reason is clear in that in an instructional setting, the intended development of the learners' interlanguage as a result of the researcher's instructional intervention, and also the nature of intervention itself, despite its inherently manipulative nature, is what we want to analyse and study.

In this study, all four of the participants were told that they were involved in some implicit instructional setting. However, special effort had been made to ensure that all discussions were based on the naturally occurring context of the participants' social lives, and would thus be assumed to be taken as naturally occurring on the part of the participants. From the point of view of the participating researcher, on the other hand, a certain extent of instructional manipulation would be carried out in order to qualify the online discussion as an instructional setting and to a large extent pedagogically driven. It can thus be said that from the researcher's point of view his discourse would not be natural, but it should be seen by the participants to be naturally occurring discourse with a view to help them learn.

Potter and Wetherell (1995) note that interaction in a research setting is "genuine": "it is genuine interaction in a laboratory" (p. 217). From this perspective, so can it now be said that the somewhat contrived pedagogically driven discourse

produced by the researcher/tutor is natural. In fact, “any interactional phenomenon can be naturalised by treating it as natural” (Edwards, 1997, p.89).

Furthermore, while non-naturally occurring “talk” is not usually of interest in itself, the type of pedagogically driven non-natural (from the point of view of non-naturalised outsiders) discourse and the learners’ response to it are of special interest here and the foci of interest in this study.

### **3.3 Research Participants and Data**

Two sets of data have been collected from two separate settings. The first was collected from an informal one-on-one setting through the personal arrangement of the researcher with acquaintances who were university undergraduates, while the second was collected from email discussion groups set up as a supplement to a formal English For Specific Purpose (ESP) course in a local college. The purpose of such an email discussion group was to provide an additional online space for the students to carry out purposive reading and writing, which was inadequate and insufficient in conventional classrooms.

The researcher cum participant was the only online and face-to-face teacher for both settings. For the first one-on-one setting, there was no face-to-face teaching conducted by the researcher/teacher for the participants and the online email exchanges constituted the only teaching-learning experiences in an informal manner. This was because the instructional setting here was initiated through personal arrangement and was not restrained by the formality of an educational institution. The second group email discussion was more structured and formal in nature as this involved true students in a local college. So naturally the main teaching-learning experiences between the researcher/teacher and the students were in-class face-to-face

teaching in an ESP context while the online experience was organised as supplementary activities to improve students' general language proficiencies.

The researcher cum teacher was a professionally trained ESL teacher and had four years of teaching experience at the tertiary level. Despite not having any formal IT background, he had sound knowledge and skills in Information Technology. He also had experience participating in professional LISTSERVs and group email discussion for professional and socialisation purposes.

### **3.3.1 One-On-One Setting**

The first study was done on four separate and extended one-on-one email discussions that were carried out with four Chinese university undergraduates. All four students had received at least 12 years of formal English language instruction in typical Malaysian national schools. Their dominant language was Mandarin and their respective Chinese dialects. They had not actively used the English language as a means for social communication, spoken or written, as they had been living in a somewhat acquisition-poor environment for the learning of their target language, which was English. The main language used for social communication in school and other everyday settings was Mandarin and their respective Chinese dialects. The formal medium of instruction in their respective primary schools was Mandarin. This was later switched to the national language, Malay, in their secondary school.

Using email to carry out sustained discussion was a first-time experience for three of the subjects, while the fourth had been using email for sometime. So ample technical support (such as setting up the modem, necessary software installation and some basic instruction on email composition) was given to make sure that technical difficulty would not be a factor of discouragement for the three participants in this new medium of CMC.



Before the start of the email discussion, the participants were told that the purpose of carrying out the email discussion was an instructional one and they could expect to improve their writing as they engaged in the extended email discussion with the researcher.

All four subjects shared to a certain extent their social community with the researcher, being erstwhile housemates for about a year (the researcher later shifted to a place that prevented frequent face-to-face meetings before this online-tutorial started) and attending the same church (this made possible the minimum of a weekly meeting with the participants). This shared knowledge of the physical lifeworld (as opposed to the lifeworld constructed through CMC) would provide the material for the online discussion in a virtual space in a naturalistic setting.

It should be noted here that while the sharing of a physical lifeworld varies in the extent and involvement depending on individual situation, such as a rural or urban schools and the relationship between the teachers and students, it will always exist as long as it is within the context of the conventional education, with the online part serving supplementary roles.

### **3.3.2 Group Email Discussion Setting**

The stated objective of the group email discussion program was to improve the general English Language Proficiency of the students by providing more opportunities to read and write in English through meaningful and purposive online interaction using email. Even though this was conducted in an ESP course, it was felt that the students' general command of the English language still needed to be improved further. However for an intensive reading and writing program to be carried out in the normal class hour was impossible because there were only three hours of English class per week. The only solution to this was to conduct the program outside

the class time whenever the students were free. Thus the organisation of an online reading and writing program using asynchronous CMC was suggested to the department and a pioneering program was initiated in conjunction with the Promote English Month campaign of the college.

This online reading and writing program was to provide students with meaningful reading materials every week together with an intensive writing component to it. There were all together 7 groups of students taking the ESP course, all under the tutelage of the researcher. The entire online activities were conducted through the free facilities provided by Yahoogroups.com, a service provider that provides free hosting of email discussion lists.

To accomplish this, an online discussion group was created for each of the 7 groups of students. Each group had about 28 to 42 students. The students were then given instructions on how to subscribe to the online group. After all students had subscribed, an article related to science and technology, in line with the ESP course, which is English For Science, was selected every week to be sent to the email discussion groups. Since the students might not be able to identify the issues discussed or implicated in the article, some comments and relevant questions were given by the tutor at the beginning of the email postings before the articles to trigger and facilitate students' discussion. Students read the article sent to them every week through the discussion lists before the week started by the tutor, who also served as the discussion groups' moderator. The students were instructed to write a personal response of at least 50 words to the issues raised in the article and send their responses to their respective online group for comments by their classmates. Before the week ended all students would have to write a critical comment, again with a minimum of 50 words, on at least one of their classmates' reading response(s). This

process would be repeated for the following week based on a fresh article and would continue throughout the whole semester.

The weekly article was to serve as a source and trigger for topical discussion where relevant concepts, facts, arguments were provided. Besides, the article would also provide the basic vocabulary for the students to be used in their online discussion. Furthermore, it has been argued that if students were reading the same material and writing on the same topics, they would have more to talk about (or discuss, interact, debate) in their online group interaction. This would provide a real audience for students' writings and ensure that the authenticity and a sense of purpose for all online writing tasks were catered for.

The online reading and writing task was followed up by an in-class forum in the following week where six or seven students, according to the class name lists, were called to be the panellists of the forum. As the main speakers of the forum the students were told that they could not read from pre-written scripts but were to speak impromptu based only on short points that they were advised to jot down from the preceding online discussions. The students were told right from the beginning of the program that such a forum would be carried out and that the panellists should try to read all their group members'/classmates' email responses so that they would know what to expect in the forum as anyone from the floor could ask them any question on the week's topic. They were also told to practise pronouncing any word that they encountered in the online discussion that they might not be familiar with, either by referring to other more able classmates or to the tutor.

It was hoped that the online discussion would serve as a preparation for the in-class forum (a much more cognitively demanding task than the online writing task) so that all relevant concepts and vocabulary use would have been preconditioned to

ensure a more fluent real-time production in the forum. The assumption here is that the more familiar the students are with the subject matter, the more likely it is that their memory will have relevant ready-to-use language stored (lexicalised sentence stems or lexical phrases) and the faster they are able to process it.

The students were from mixed educational backgrounds but a majority of them were from Chinese education background where Mandarin was their first language and English was rarely spoken, if at all. The students were taking a diploma course in Computer Science. So it is assumed that the students should be regular users of the Internet, both for online resources and their interpersonal communication, using online communication tools such as ICQ, MSN Messenger, MIRC, and email. Thus it was assumed that many of these students were already used to some form of CMC, both technically and linguistically, that there would be some proficient writers of email who were regular users of the Internet (CMC) as a mode of communication. However with the majority of the students coming from Chinese education background, the general language proficiency of the students would be quite low. This would affect the ability of some students to express themselves clearly through an entirely text-based medium using only their L2, which was English.

### **3.4 Data Collection Procedures**

The two sets of data were collected at different times using different procedures.

#### **3.4.1 One-On-One Setting**

Email correspondence between the instructor and the four participants were carried out independently. The instructor's replies to each of the students were readily available from the 'Sent Items' of the email client software on the instructor's

computer. The individual emails from and to each of the student were retrieved using a feature of the email client where emails from or to a particular person can be specified to be displayed. The individual emails were then saved as separate ASCII files<sup>29</sup> and sorted in sequential order, alternating between the instructor's and the respective student's emails, to be analysed later. After a cool down period of a few months the archived email exchanges were then examined for any episodes of special pedagogical interests, determined through a priori categories based on SLA theories.

### **3.4.2 Group Email Discussion Setting**

Since the group email discussions were hosted by a discussion list service provider (<http://groups.yahoo.com>) that also provides a web site for every discussion group, all automatically archived emails can be accessed anytime through the web interface (See Appendix A for the groups' addresses).

The data for this study were gathered from the 7 email discussion groups starting 22 October 2001, the date when the researcher sent the first article for discussion to the groups, until 17 January 2002 when the last article was sent by the researcher. Of course the emails spilled over after the date and there were subsequent correspondence between group members. The average number of emails generated for each group during this period was 349 per group and the total number of emails for all 7 groups was 2444.

As the moderator for all seven groups, a copy of all emails sent to the seven discussion lists were also sent to the researcher's email account which were then

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<sup>29</sup> An ASCII file is a text file that consists of characters from the American Standard Code for Information Exchange. Nearly all computers support the ASCII standard when representing letters, symbols and numbers in files.

filtered by the email client software into different folders to be retrieved and analysed later, as described in the previous section for the one-on-one setting.

### **3.5 Principles for CALL Evaluation**

Due to the unimpressive achievements of CALL in the seventies and eighties of the last century, it has always been viewed by some as something that requires special scrutiny and justification beyond what is expected of other classroom activities (Chapelle, 2001). She further points out that evaluation of CALL should be seen as a solution to the problem of instructed SLA and to achieve this we need to understand the conditions that language teachers dealing with CALL should create for instructed SLA. Doughty (1991) and Cook (1992) also assert that models of second language acquisition should form the basis of CALL research and development.

Thus in this study, theory and research from SLA will be taken as the point of departure, together with the theories and research from other related disciplines serving as secondary sources of guidance. With this in mind, some evaluation criteria will need to be employed to evaluate, as well as to guide the construction of, the model of second language instruction in CALL. Chapelle (2001) suggests five conditions for the evaluation criteria:

1. Evaluation criteria should incorporate findings and theory-based speculation about ideal conditions for SLA.
2. Criteria should be accompanied by guidance as to how they should be used.
3. Both criteria and theory need to apply not only to software, but also to the task that the teacher plans and that the learner carries out.
4. Evaluation for CALL cannot be a categorical decision about effectiveness but has to result in an argument indicating in what ways a particular CALL task is appropriate for particular learners at a given time.
5. CALL should be evaluated through two perspectives: judgemental analysis of software and teacher-planned tasks, and empirical analysis of learners' performance.

From Chapelle's fifth evaluation criterion, it is suggested that the argument of evaluation should be constructed on the basis of both the judgemental and empirical analyses. These spell out the general structure of analysis for CALL evaluation and will be adopted in the next chapter.

The judgemental evaluation will offer a methodology for making systematic hypotheses about the benefits that can be derived from CALL tasks. The empirical evaluation, on the other hand, will give support through observable data that provide evidence of CALL qualities. Commenting on the methods for empirical research, Chapelle (2001) notes that currently the focus of CALL researchers has to a large extent shifted from measurement of learning outcomes to the investigation of classroom process. However, it should be pointed out here that any learning processes that do not contribute to positive learning outcome, be it directly or indirectly, are necessarily misguided and pointless.

With regard to the first condition of the evaluation criteria, the conditions for optimal language learning environments suggested by Egbert, Chao, and Hanson-Smith (1999) will be used (see section 4.3.5), of which they claim are based on SLA, ESL, and learning theory literatures. They are:

1. Learners have opportunities to interact and negotiate meaning.
2. Learners interact in the target language with an authentic audience.
3. Learners are involved in authentic tasks.
4. Learners are exposed to and encouraged to produce varied and creative language.
5. Learners have enough time and feedback.
6. Learners are guided to attend mindfully to the learning process.
7. Learners work in an atmosphere with an ideal stress/anxiety level.
8. Learner autonomy is supported.

Chapelle's second and fourth criteria on guidance and argument for appropriateness would be demonstrated in the next chapter under section 4.1

(Empirical Analysis) where arguments will be based on principles derived from the review and synthesis in Chapter Two.

The third condition for evaluation is on the nature and effectiveness of tasks and will be based on Skehan's (1998) more general cognitive guidelines for implementing effective task-based instruction (see section 4.3.6):

1. Choose a range of target structures
2. Choose tasks which meet the utility criterion
3. Select and sequence tasks to achieve balanced goal development
4. Maximise the chances of focus on form through attentional manipulation
5. Use cycles of accountability (p. 129-132)

The notion of task for this study would be based on the definitions provided by Bygate, Skehan, and Swain (2001b) for task with the pragmatic/pedagogic-teachers/teaching dimensions on the one hand:

A task is an activity, susceptible to brief or extended pedagogic intervention, which requires learners to use language, with emphasis on meaning, to attain an objective. (p. 11)

On the other hand the task definition for pragmatic/pedagogic-learners/learning dimensions is:

A task is an activity, influenced by learner choice, and susceptible to learner reinterpretation, which requires learners to use language, with emphasis on meaning, to attain an objective. (p.11)

Thus a task appropriateness evaluation would be seen from both the teacher's and the learner's points of view, as any task designed and carried out would be essentially an indivisible teaching and learning activity.

Chapelle's final evaluation criterion determines the general structure of analysis in the next chapter, which is divided into two sections, namely empirical analysis and judgemental analysis.

The empirical analysis will analyse learners' performance or behaviours qualitatively in the online instructional setting of NBLT, based on the empirical data



collected. The judgemental analysis that follows will be made based on the conditions for optimal language learning environments and effective task-based instruction.